

## Claims

1. A welding wire container which includes an outer shell 110 for storing welding wire W therein and a base plate 120 for closing a lower end of the outer shell 110, the welding wire container comprising:

an upper protrusion 220 enlarged in diameter beyond the outer shell 110 for structurally reinforcing an upper outer portion of the outer shell 110;

10 a lid 210 sized for covering the outer shell; and

an upper fixture 230 for fixing and wrapping the lid 210 at an upper end of the outer shell 110 to obtain structural reinforcement, wherein the upper fixture 230 includes a flange 232 extending inward along an outer edge of the lid 210, a supporting face 234 folded from the flange 232 and extending along an outer periphery of the upper protrusion 220 and a folded groove 236 arranged under the supporting face 234 and having a diameter smaller than that of the upper protrusion 220.

20 2. The welding wire container in accordance with claim 1, wherein the upper protrusion 220 includes a folded portion 224 which is enlarged in diameter in the outer shell 110.

3. The welding wire container in accordance with claim 25 1, wherein the upper protrusion 220 includes a ring member 226 which is enlarged in diameter, the ring member 226 being fitted around and fixedly bonded to the outer shell 110.

4. The welding wire container in accordance with claim 1, wherein the upper protrusion 220 includes an enlarged portion 228 enlarged in diameter at an upper edge of the outer shell 110 and a ring member 229 seated on an inner edge 228a of the enlarged portion 228, the ring member 229 having an inside diameter substantially identical with that of the outer shell 110.

5. The welding wire container in accordance with claim 1, wherein the outer shell 110, the base plate 120, the lid 210 and the upper fixture 230 are made of paper.

6. The welding wire container in accordance with claim 1, wherein the lid 210 includes a flange 212 contacting with an upper edge of the outer shell 110 and a stepped portion 214 extending down inside the outer shell 110 for supporting an upper inner periphery of the outer shell 110.

7. The welding wire container in accordance with claim 1, wherein the flange 232 of the upper fixture 230 has a central inner periphery 232a which is sized adequate for fixing a head cap 238 for drawing out the welding wire.

8. A welding wire container which includes an outer shell 110 for storing welding wire W therein, a base plate 120 for closing a lower end of the outer shell 110 and a lid 150 for covering the outer shell 110, the welding wire container comprising:

a fitting projection 305 arranged in a lower inner portion of the outer shell 110 and having a diameter smaller than that of the base plate 120 for catching and supporting the base plate 120 thereon; and

5 a lower fixture 307 for wrapping the lower end of the outer shell 110 to structurally reinforcing the same, wherein the lower fixture 307 includes a flange 308 extending along a lower edge of the outer shell 110 and a supporting face 309 folded from the flange 308 and extending along a lower outer periphery of  
10 the outer shell 110.

9. The welding wire container in accordance with claim 8, wherein the fitting projection 305 includes a lower end portion of the outer shell 110 which is folded inward into an  
15 L-shape.

10. The welding wire container in accordance with claim 8, wherein the fitting projection 305 includes a folded portion 310 which is overlapped to have an outside diameter substantially  
20 identical with the inside diameter of the lower end of the outer shell 110.

11. The welding wire container in accordance with claim 8, wherein the fitting projection 305 includes a ring member  
25 314 having an outside diameter substantially identical with the inside diameter of the lower end of the outer shell 110, the ring member 314 being fixedly bonded to the lower inner portion of the outer shell 110.

12. The welding wire container in accordance with claim 8, wherein the fitting protrusion 305 includes a steel backing member 320 extending along a lower inner periphery of the outer shell 110 and tightly fixed thereto, wherein the backing member 320 includes an outer vertical portion extending along the lower inner periphery of the outer shell 110, the vertical portion having a number of holes 322 perforated from an inner face toward an outer face and burrs 327 projected thereon, and a flange 329 folded from the outer vertical portion and extending along an outer edge of the base plate 120.

13. The welding wire container in accordance with claim 8, wherein the fitting projection 305 includes a folded portion 330 reduced in diameter adjacent to the lower end of the outer shell 110.

14. The welding wire container in accordance with claim 8, wherein the outer shell 110, the base plate 120 and the lower fixture 307 are made of paper.

15. A welding wire container which includes an outer shell 110 for storing welding wire W therein and a base plate 120 for closing a lower end of the outer shell 110, the welding wire container comprising:

an upper protrusion 220 enlarged in diameter beyond the outer shell 110 for structurally reinforcing an upper outer portion of the outer shell 110;

a lid 210 sized for covering the outer shell 110;

an upper fixture 230 for fixing and wrapping the lid 210 at an upper end of the outer shell 110 to obtain structural reinforcement, wherein the upper fixture 230 includes a flange 232 extending inward along an outer edge of the lid 210, a supporting face 234 folded from the flange 232 and extending along an outer periphery of the upper protrusion 220 and a folded groove 236 arranged under the supporting face 234 and having a diameter smaller than that of the upper protrusion 220;

a fitting projection 305 arranged in a lower inner portion of the outer shell 110 and having a diameter smaller than that of the base plate 120 for catching and supporting the base plate 120 thereon; and

a lower fixture 307 for wrapping the lower end of the outer shell 110 to structurally reinforcing the same, wherein the lower fixture 307 includes a flange 308 extending along a lower edge of the outer shell 110 and a supporting face 309 folded from the flange 308 and extending along a lower outer periphery of the outer shell 110.

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16. The welding wire container in accordance with one of the preceding claims 1, 8 and 15, wherein the outer shell 110 includes an outer protrusion 260 enlarged in diameter adjacent to a lower end of an upper fixture 230.

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17. The welding wire container in accordance with claim 16, wherein the outer protrusion 260 includes a folded portion 262 enlarged in diameter beyond the outer shell 110 adjacent

to the lower end of the upper fixture 230.

18. The welding wire container in accordance with claim 16, wherein the outer protrusion 260 includes a ring member 264 which is enlarged in diameter adjacent to the lower end of the upper fixture 230, the ring member 264 being fitted around and fixedly bonded to the outer shell 110.

19. The welding wire container in accordance with one of the preceding claims 1, 8 and 15, further comprising an inner shell 250 coaxially arranged in a central portion of the outer shell 110, wherein the inner shell 250 is fixed at a lower end thereof to the base plate 120 and folded inward at an upper end thereof to form a folded portion 252 for structurally reinforcing the upper end.

20. The welding wire container in accordance with claim 8 or 15, wherein the base plate 120 includes an underlying circular backing member 127 fixed thereto, the backing member 127 having an outer periphery corresponding to an inner periphery of the fitting projection 305 for structurally reinforcing the lower inner portion of the outer shell 110.

21. The welding wire container in accordance with claim 8 or 15, further comprising: a backing member 350 made of steel and mounted on an inner portion of the fitting projection 305, wherein the baking member 350 includes:

- a body 352 extending along an inner periphery of the

fitting projection 305, the body 352 having a number of holes 354 perforated from an inner face thereof toward an outer face thereof and projected burrs 357;

- a flange 359 folded from the body 352 and extending along  
5 an outer edge of the base plate 120;

- cut sections 360 formed at the body 352 and the flange 359 in a radial direction of the outer shell 110; and

- a diameter-adjusting means 362 arranged at both ends of the body 352 and the flange 359, whereby the backing member 350  
10 is adjusted in diameter.

22. The welding wire container in accordance with claim 21, wherein the diameter-adjusting means 362 includes:

- nut members 364 mounted on the body 352 in an inner  
15 periphery thereof adjacent to the cut sections; and

- a bolt member 368 having male threads 366 at both ends for screwing into the nut members 364,

wherein rotation of the bolt member 368 enlarges the diameter of the body 352 so that an outer periphery of the backing member 350 closely contacts with the lower inner periphery of the outer shell 110, whereby the backing member 350 more securely  
20 supports the lower end of the outer shell 110 against external force.

23. The welding wire container in accordance with claim 25 8 or 15, wherein the lower fixture 307 includes clamping means 412 at end sections cut along a radial direction of the outer shell 110, wherein the clamping means 412 tightens the lower

end of the outer shell 110 so that the base plate 120 and the fitting projection 305 of the outer shell 110 closely contact with each other.

5           24. The welding wire container in accordance with claim 23, wherein the supporting face 309 of the lower fixture 307 has a number of holes 414 perforated from an outer face toward an inner face and burrs 415 projected around the holes 414 for fixedly pressing the outer periphery of the outer shell 110.

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          25. The welding wire container in accordance with claim 23, wherein the clamping means 412 includes a clamp, wherein the clamp 412 has:

          a handle 420 rotatably mounted on one end of the supporting  
15   face 309;

          a hook 424 arranged in a middle portion of the handle 420;  
and

          a protrusion 426 arranged at the other end of the supporting  
face 309 and adapted to catch the hook 424,

20           whereby the handle 420 is flapped toward the protrusion 426, the hook 424 is hung around the protrusion 426, and then the handle 420 is flapped away from the protrusion 426 allowing the hook 424 to pull the protrusion 426 so that the ends of the supporting face 309 are strongly connected to each other via  
25   the hook 424 and the protrusion 426.

          26. A welding wire container which includes an outer shell 110 for storing welding wire W therein, a base plate 120 and

a lid 150 for covering the outer shell 110, the welding wire container comprising:

upper and lower fixtures 510a and 510b fitted around respectively upper and lower portions of the outer shell 110, wherein the upper fixture 510a has a flange 512a extended for a length substantially identical with the thickness  $t$  of the outer shell 110, and the lower fixture 510b has a flange 512b extended for catching the base plate 120 thereon; and

clamping means at both ends of the upper and lower fixtures 510a and 510b,

wherein the clamping means are detachably tightened so that the outer shell 110 maintains its original shape and couples with the base plate 120, and the clamping means are tightened and loosed so that the outer shell 110, the base plate and the upper and lower fixtures 510a and 510b are readily coupled and disassembled.

27. The welding wire container in accordance with claim 26, wherein the upper and lower fixtures 510a and 510b each include:

a number of holes 535 perforated from an outer face toward an inner face; and

burrs 537 projected around the holes 535 in the inner face for fixedly pressing the outer face of the outer shell 110.

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28. The welding wire container in accordance with claim 27, wherein the holes 535 of the upper and lower fixtures 510a and 510b have the form of a number of slots 535a perforated

perpendicular to the direction of the upper and lower fixtures 510a and 510b, the slots being arranged in rows in the outer faces of the upper and lower fixtures 510a and 510b,

wherein the upper and lower fixtures 510a and 510b each  
5 includes a clamp 545 at one end thereof and an insert 547 at the other end, the insert 547 being formed by removing a portion of the flange 512a,

wherein the insert 547 has incisions 541 corresponding to threads of bolts 550 which are rotatably installed in the clamp  
10 545,

wherein the upper and lower fixtures 510a and 510b each are longer than the circumference of the outer shell 110, and

wherein the insert 547 is inserted into a bore 545a of the fixture 545 and screwed out between the bolts 550 in the clamp  
15 545 and the each fixture 510a or 510b while drawing together the both ends of the each fixture 510a or 510b so that the both ends are bound to each other,

whereby the outer shell 110, the base plate 120 and the upper and lower fixtures 510a and 510b are readily coupled and  
20 disassembled.

29. The welding wire container in accordance with claim 26, wherein the upper and lower fixtures 510a and 510b each have a protrusion 522 in an inner periphery and a groove 524 in an  
25 outer periphery,

wherein the outer shell 110 has upper and lower protrusions 112 and upper and lower grooves 114 in outer peripheries thereof,

wherein the protrusions 522 of the upper and lower fixtures

510a and 510b correspond respectively to the grooves 114 of the outer shell 110, and so positioned that the base plate 120 is caught on the lower protrusion 112 of the outer shell 110.

5        30. The welding wire container in accordance with claim 29, wherein the upper and lower fixtures 510a and 510b each include:

        a number of holes 535 perforated from an outer face toward an inner face; and

10        burrs 537 projected around the holes 535 in the inner face for fixedly pressing the outer face of the outer shell 110.

        31. The welding wire container in accordance with claim 30, wherein the holes 535 of the upper and lower fixtures 510a  
15        and 510b have the form of a number of slots 535a perforated perpendicular to the direction of the upper and lower fixtures 510a and 510b, the slots being arranged in rows in the outer faces of the upper and lower fixtures 510a and 510b,

        wherein the upper and lower fixtures 510a and 510b each  
20        includes a clamp 545 at one end thereof and an insert 547 at the other end, the insert 547 being formed by removing a portion of the flange 512a, the protrusion 522 in the inner periphery and a groove 524 in the outer periphery,

        wherein the insert 547 has incisions 541 corresponding to  
25        threads of bolts 550 which are rotatably installed in the clamp 545,

        wherein the upper and lower fixtures 510a and 510b each are longer than the circumference of the outer shell 110, and

wherein the insert 547 is inserted into a bore 545a of the fixture 545 and screwed out between the bolts 550 in the clamp 545 and the each fixture 510a or 510b while drawing together the both ends of the each fixture 510a or 510b so that the both  
5 ends are bound to each other,

whereby the outer shell 110, the base plate 120 and the upper and lower fixtures 510a and 510b are readily coupled and disassembled.

10 32. The welding wire container in accordance with claim 26, wherein the base plate 120 includes:

a circular plate 570 corresponding to the inside diameter of the outer shell 110; and

a circular dampproof plate 580 corresponding to the  
15 outside diameter,

wherein the circular plate 570 has an upper plate 572a, an intermediate plate 572b and a lower plate 572c,

wherein the upper plate 572a has a circular array of holes 572 perforated in a central portion thereof,

20 wherein the intermediate plate 572b has slots 576 perforated corresponding to the circular array in the upper plate 572a, the slots 576 having the same number as the holes 574 in the upper plate 572a and being longer than the holes 574 in the upper plate 572a,

25 wherein the lower plate 572c has the form of a circle,

wherein the upper plate 572a, the intermediate plate 572b, the lower plate 572c and the circular dampproof plate 580 are layered in their sequence,

the welding wire container further comprising: an inner shell 140 erected corresponding to the circular arrays,

wherein the inner shell 140 has a number of stepped projections 143 in a lower end for being fixed to fitting steps 578 defined in the upper plate 572a and the intermediate plate 572b, whereby the inner shell 140 is coupled with the base plate 120.

33. The welding wire container in accordance with one of the preceding claims 1, 8, 15 and 26, wherein the outer shell 110 has a polygonal cross section.

34. A welding wire package comprising: the welding wire container for storing welding wire stacked therein in accordance with one of the preceding claims 1, 8, 15 and 26.